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In reply please refer to
File

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DATE: <DATE>
NPDES PERMIT NO. HI 0020877

FACT SHEET: **APPLICATION FOR RENEWAL OF NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND ZONE OF MIXING (ZOM) TO DISCHARGE TO MAMALA BAY, PACIFIC OCEAN, WATERS OF THE UNITED STATES**

PERMITTEE: **CITY AND COUNTY OF HONOLULU, DEPARTMENT OF ENVIRONMENTAL SERVICES**

FACILITY: **HONOULIULI WASTEWATER TREATMENT PLANT**

FACILITY MAILING ADDRESS
City and County of Honolulu
Honouliuli Wastewater Treatment Plant
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Kapolei, Hawaii 96707

FACILITY STREET ADDRESS
City and County of Honolulu
Honouliuli Wastewater Treatment Plant
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Ewa Beach, Hawaii 96706

PERMITTEE MAILING ADDRESS
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City and County of Honolulu
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This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of the draft permit.

A. Permit Information

The following table summarizes administrative information related to the Honouliuli Wastewater Treatment Plant (hereinafter, facility).

Table F-1. Facility Information

Permittee	City and County of Honolulu
Name of Facility	Honouliuli Wastewater Treatment Plant
Facility Address	91-1000 Geiger Road Ewa Beach, HI 96706
Facility Contact, Title, and Phone	Lori M.K. Kahikina, Director, (808) 768-3486
Authorized Person to Sign and Submit Reports	Lori M.K. Kahikina, Director, (808) 768-3486
Mailing Address	1000 Ulouhia St, Suite 308 Kapolei, HI 96707
Billing Address	Same as above
Type of Facility	Wastewater Treatment Plant
Pretreatment Program	Yes
Reclamation Requirements	No
Facility Design Flow	38 million gallons per day (MGD)
Receiving Waters	Mamala Bay, Pacific Ocean
Receiving Water Type	Pacific Ocean: Marine
Receiving Water Classification	Class A Wet Open Coastal Waters (HAR, Section 11-54-06(b)(2)(B))

1. NPDES Permit No. HI 0020877, including ZOM, became effective on June 6, 1991, and expired on June 5, 1996. The Permittee reapplied for an NPDES permit and ZOM on July 8, 2011. Additional information was requested and submitted by the Permittee on February 1, 2013 and August 9, 2013. The Hawaii Department of Health (hereinafter DOH) administratively extended the NPDES permit, including the ZOM, on **<DATE>**, pending the reapplication processing.

2. The Director of Health (hereinafter Director) proposes to issue a permit to discharge to the waters of the state until **<DATE>**, and has included in the proposed permit those terms and conditions which are necessary to carry out the provisions of the Federal Water Pollution Control Act (P.L. 92-500), Federal Clean Water Act (CWA) (P.L. 95-217) and Chapter 342D, Hawaii Revised Statutes.

B. Facility Setting

1. Facility Operation and Location

The Permittee owns and operates the facility, located in Kapolei, Hawaii, on the island of Oahu. The facility has a design dry weather flow capacity of 38 MGD and provides primary and some secondary treatment of wastewater for approximately 335,000 people in the western portion of the Mamala Bay Service District. All incoming influent receives primary treatment consisting of preliminary influent screening, grit removal, pre-aeration, and primary clarification. From there, flow is separated into two streams. One stream is sent straight to effluent screens and does not receive any more treatment, while up to 13 MGD of primary treated wastewater is routed through two adjustable V-notch weir gates to secondary treatment, which includes biotowers, solids contact, and secondary clarification. Up to 10 MGD of the secondary treated effluent may then be directed to the tertiary treatment facility to produce R1 reuse water and reverse osmosis (RO) reuse water, while the remaining 3 MGD of secondary treated wastewater is routed to the effluent screens. The primary treated effluent and remaining secondary treated effluent are then commingled at the effluent screens. The combined effluent flows through fine screens and finally to the Barbers Point Ocean Outfall (Outfall Serial No. 001) in Mamala Bay, Pacific Ocean, at latitude 21°16'47" N and longitude 158°01'40" W. The tertiary level treatment facility is managed by the Honolulu Board of Water Supply and operations at the tertiary facility are covered by a separate permit.

Sludge processing at the facility consists of digestion and thickening by gravity thickeners, and dewatering by centrifuge. Solids are hauled offsite to a landfill.

Outfall Serial No. 001 is located in a water depth of about 200 feet below mean lower low water (MLLW) and about 8,760 feet from the shoreline. The diffuser section of the outfall is 1,750 feet long and consists of three sections that range from 48 inches to 78 inches in diameter. The diffuser section of the outfall has 146 diffuser ports that range in size from 3.41 inches to 3.74 inches in diameter and two ends ports with a 6-inch diameter.

Storm water from the facility is regulated under the City and County of Honolulu's municipal separate storm sewer (MS4) permit, NPDES Permit No. HIS000002.

Figure 1 of the draft permit provides a map showing the location of the facility. Figure 2 of the draft permit provides a map of the ZOM, Zone of Initial Dilution (ZID), and receiving water monitoring station locations.

2. Receiving Water Classification

The Mamala Bay, Pacific Ocean, is designated as "Class A Wet Open Coastal Waters" under Section 11-54-06(b)(2)(B), Hawaii Administrative Rules (HAR).

Commented [DC1]: The previous permit used "dry", but the Pemrittee states in the application that the DOH confirmed it should be "wet". Please verify.

Protected beneficial uses of Class A waters include recreation, aesthetic enjoyment, and the protection and propagation of fish, shellfish, and wildlife.

3. Ocean Discharge Criteria

The Director has considered the Ocean Discharge Criteria, established pursuant to Section 403(c) of the CWA for the discharge of pollutants into the territorial sea, the waters of the contiguous zone, or the oceans. The United States Environmental Protection Agency (EPA) has promulgated regulations for Ocean Discharge Criteria in 40 Code of Federal Regulations (CFR) Part 125, Subpart M. The Director has determined that the discharge will not cause unreasonable degradation to the marine environment. Based on current information, the Director proposes to issue a permit.

4. Impaired Water Bodies on CWA 303(d) List

CWA section 303(d) requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources.

On September 20, 2013, the EPA approved the 2012 State of Hawaii Water Quality Monitoring and Assessment Report, which includes the 2012 303(d) List of Impaired Water Bodies in the State of Hawaii.

The Mamala Bay (Ft Kam off shore) is not listed as an impaired water body for any pollutants on the 2012 303(d) list, however, the impairment status of enterococci is unknown. Currently, this section of Mamala Bay is reported as a Category 2 and 3 waterbody. At present, no TMDLs have been established for this waterbody.

5. Summary of Existing Effluent Limitations

a. Existing Effluent Limitations and Monitoring Data

Effluent limitations contained in the existing permit for discharges from Outfall Serial No. 001 and representative monitoring data from July 2007 through July 2013, are presented in the following tables.

Table F-2. Historic Effluent Limitations and Monitoring Data – Outfall Serial No. 001

Parameter	Units	Effluent Limitation			Reported Data[1]		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Flow	MGD	--	--	[2]	--	--	47
pH	standard units	Not less than 6.0 nor greater than 9.0			6.6 – 7.6		
Biochemical Oxygen	mg/L	160[3]	240[3]	--	163[4]	177[4]	--
	lbs/day	33,487[3]	50,230[3]	--	28,376[4]	31,601[4]	--

Parameter	Units	Effluent Limitation			Reported Data[1]		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Demand (5-Day)	mg/L	161[5]	166[5]	--	133[6]	143[6]	--
	lbs/day	53,679[5]	55,424[5]	--	23,895[6]	27,602[6]	--
	% Removal	As a monthly average, not less than 30 percent removal efficiency from influent stream.[5]			40[7]		
Total Suspended Solids	mg/L	95[3]	142[3]	--	60[4]	92[4]	--
	lbs/day	19,882[3]	29,720[3]	--	11,762[4]	21,430[4]	--
	mg/L	50[5]	53[5]	--	39[6]	61[6]	--
	lbs/day	16,721[5]	17,580[5]	--	8,289[6]	14,989[6]	--
	% Removal	As a monthly average, not less than 30 percent removal efficiency from influent stream.[5]			56[7]		
Whole Effluent Toxicity – *T. gratilla*	TUc	159.7	--	159.7	>625	--	>625
Whole Effluent Toxicity – *C. dubia*	TUc	159.7	--	159.7	79.4	--	79.4
Total Residual Chlorine	mg/L	--	--	1.0	--	--	<0.02
Oil and Grease	mg/L	--	--	[2]	--	--	39
Temperature	°C	--	--	[2]	--	--	28
Enterococci	CFU/100 ml	--	--	[2]	--	--	5,500,000
Fecal Coliform Bacteria	CFU/100 ml	--	--	[2]	--	--	30,000,000

1 Source: Monthly DMR's and daily data submitted by the Permittee from July 2007 through July 2012. This data represents the highest reported value over the monitoring period specified.
2 No effluent limitations for this pollutant in the previous permit, only monitoring required.
3 Effluent limitations contained in the previous permit and effective through December 2010. These effluent limitations were replaced with interim effluent limitations in the December 2010 Consent Decree for the United States of America v the City and County of Honolulu (2010 Consent Decree).
4 Data reported from July 2007 through November 2010.
5 Interim effluent limitations contained in he 2010 Consent Decree. Interim effluent limitations are applicable until the facility is in compliance with secondary treatment standards and became effective in December 2010.
6 Data reported from December 2010 through July 2013.
7 Data represents the minimum percent removal reported from December 2010 through July 2012.

6. Compliance Summary

The following table lists effluent limitation violations as identified in the monthly, quarterly, and annual DMRs submitted by the Permittee from January 2007 to July 2012.

Table F-3. Summary of Compliance History

Monitoring Period	Violation Type	Pollutant	Reported Value	Permit Limitation	Units
7/1/08 – 7/31/08	Monthly Average	BOD_5	163	160	mg/L
8/1/08 – 8/31/08	Monthly Average	BOD_5	162	160	mg/L
February 2008 – July 2012	Daily Maximum	Whole Effluent Toxicity – *T. gratilla*	[1]	159.7	TUc
February 2008 – July 2012	Monthly Average	Whole Effluent Toxicity – *T. gratilla*	[2]	159.7	TUc

[1] Whole effluent toxicity samples using the species *T. gratilla* exceeded the daily maximum effluent limitation 123 times and the monthly average effluent limitation 54 times from February 2008 through December 2012. During that time period, the facility did not exceed whole effluent toxicity limitations when using *C. dubia*.

7. December 2010 United States of America v. City and County of Honolulu Consent Decree (2010 Consent Decree)

On May 15, 1995, the U.S. District Court for the District of Hawaii entered a Consent Decree requiring the facility to undertake certain steps to remedy CWA violations alleged in a Supplemental Complaint written on behalf of the EPA and DOH on October 3, 1994 (hereinafter, "the 1994 Complaint" and "the 1995 Consent Decree"). The 1995 Consent Decree required the facility to undertake specific actions to improve conditions in its wastewater collection system, through, among other things, implementing comprehensive collection system maintenance and capacity programs, and to undertake two Supplemental Environmental Projects. After various complaints from the Sierra Club, Hawaii's Thousand Friends, and Our Children's Earth Foundation (hereinafter, Interveners), the Court entered a Stipulated Order on October 10, 2007. After several more complaints, all parties agreed on a new Consent Decree entered on December 17, 2010 (2010 Consent Decree), which replaced the 1995 Consent Decree and the 2007 Stipulated Order, and terminated all complaints from the Interveners.

In addition to the collection system upgrades the facility is required to undergo, the 2010 Consent Decree requires the Permittee to withdraw any appeals of EPA's denial of its application for a permit pursuant to Section 301(h) of the Clean Water Act, which allows a waiver from secondary treatment for ocean discharges. The 2010 Consent Decree requires the Permittee to complete construction of facilities necessary to comply with secondary treatment standards by no later than June 1, 2024, and sets forth interim compliance milestones and interim effluent limitations for BOD_5 and TSS until the facility achieves compliance with secondary treatment standards. The 2010 Consent Decree supersedes requirements in the draft permit.

8. Planned Changes

In accordance with the 2010 Consent Decree, the Permittee is required to complete various plant upgrades necessary to comply with secondary standards. The deadlines for completing the upgrades is as follows:

Table F-4. 2010 Consent Decree Deadlines

Deadline	Requirement
1/1/2017	Execute a design contract, and issue a notice to proceed with design.
1/1/2019	Execute a construction contract, and issue a notice to proceed with construction.
6/1/2024	Complete construction of facilities to comply with secondary treatment standards.

A summary of the 2010 Consent Decree requirements is provided as Attachment A to this Fact Sheet.

C. Applicable Plans, Policies, and Regulations

1. Hawaii Administrative Rules, Chapter 11-54

On November 12, 1982, the Hawaii Administrative Rules, Title 11, Department of Health, Chapter 54 became effective (hereinafter HAR, Chapter 11-54). HAR, Chapter 11-54 was amended and compiled on October 6, 1984; April 14, 1988; January 18, 1990; October 29, 1992; April 17, 2000; October 2, 2004; June 15, 2009; and the most recent amendment was on October 21, 2012. HAR, Chapter 11-54 establishes beneficial uses and classifications of state waters, the state antidegradation policy, zones of mixing standards, and water quality criteria that are applicable to Mamala Bay.

Requirements of the draft permit implement HAR, Chapter 11-54.

2. Hawaii Administrative Rules, Chapter 11-55

On November 27, 1981 HAR, Title 11, Department of Health, Chapter 55 became effective (hereinafter HAR, Chapter 11-55). HAR Chapter 11-55 was amended and compiled on October 29, 1992; September 22, 1997; January 6, 2001; November 7, 2002; August 1, 2005; October 22, 2007; June 15, 2009; and the most recent amendment was on October 21, 2012. HAR, Chapter 11-55 establishes standard permit conditions and requirements for NPDES permits issued in Hawaii.

Requirements of the draft permit implement HAR, Chapter 11-55.

3. State Toxics Control Program

NPDES Regulations at 40 CFR 122.44(d) require permits to include water quality-based effluent limitations (WQBELs) for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a water quality standard. The *State Toxics Control Program: Derivation of Water Quality-Based Discharge Toxicity Limits for Biomonitoring and Specific Pollutants* (hereinafter, STCP) was finalized in April, 1989, and provides guidance for the development of water quality-based toxicity control in NPDES permits by developing the procedures for translating water quality standards in HAR, Chapter 11-54 into enforceable NPDES permit limitations. The STCP identifies procedures for calculating permit limitations for specific toxic pollutants for the protection of aquatic life and human health.

Guidance contained in the STCP was used to determine effluent limitations in the draft permit.

D. Rationale for Effluent Limitations and Discharge Specifications

The CWA requires point source Permittees to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44(a), permits are required to include applicable technology-based limitations and standards; and at 40 CFR 122.44(d), permits are required to include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using one or more of three methods described at 40 CFR 122.44(d) – 1) WQBELs may be established using a calculated water quality criterion derived from a proposed state criterion or an explicit state policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using EPA criteria guidance published under CWA Section 304(a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

1. Technology-Based Effluent Limitations

a. Scope and Authority

Section 301(b) of the CWA and implementing EPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this permit must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133.

Regulations promulgated in 40 CFR 125.3(a)(1) require technology-based effluent limitations for municipal Permittees to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for publically owned treatment works (POTWs) [defined in section 304(d)(1)]. CWA Section 301(b)(1)(B) requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the EPA Administrator.

Based on this statutory requirement, EPA developed secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

b. Applicable Technology-Based Effluent Limitations

On September 7, 1979, the City and County of Honolulu submitted a request for a variance on secondary treatment at Honouliuli WWTP. The Permittee began discharging in January 1982 into marine waters under an NPDES permit granted by the Hawaii DOH for secondary; however, the treatment was considered to be less than primary. In September 1981 a tentative decision was given by EPA to grant a variance for BOD_5 but deny it for TSS. The Permittee then reapplied to the DOH on October 31, 1983, to reconsider the TSS variance based on improved primary treatment. From this reapplication, EPA recommended that the variance should be granted in a Tentative Decision Document dated April 4, 1988.

After the variance was granted in 1988, the NPDES permit was rewritten to reflect this in a permit issued on May 2, 1991, that became effective on June 6, 1991. That permit expired on June 5, 1996, and has been administratively extended since its expiration.

An application to reissue the discharge permit was submitted on December 1, 1995, and was updated in January 2000. The application was updated again in August 2004. On March 27, 2007, EPA issued a Tentative Decision Document that the application for a renewed variance be denied. On 9 February 9, 2009, the EPA's decision to deny the Permittee's application for a 301(h) variance became effective. The denial was on the ground that the EPA concluded that the applicant's proposed discharge will not comply with the requirements of CWA Section 301(h) and 40 CFR 125, Subpart G, and the water quality standards of HAR, Chapter 11-54. Therefore, technology-based effluent limitations in the draft permit are based on secondary treatment standards contained in 40 CFR 133, as described below.

At 40 CFR 133 in the Secondary Treatment Regulations, EPA has established the minimum required level of effluent quality attainable by secondary treatment, shown in Table F-5 below. The standards in Table F-5 are applicable to the facility and therefore established in the draft permit as technology-based effluent limitations.

Table F-5. Applicable Technology-Based Effluent Limitations

Parameter	Units	30-Day Average	7-Day Average
BOD_5[1]	mg/L	30	45
TSS[1]	mg/L	30	45
pH	standard units	6.0 – 9.0	

[1] The 30-day average percent removal shall not be less than 85 percent.

Paragraph 32 of the 2010 Consent Decree establishes interim effluent limitations and monitoring requirements for Honouliuli for flow, BOD_5 and TSS. Paragraph 32 of the 2010 Consent Decree specifically states, *"From the Effective Date of this Consent Decree until the final compliance milestone set pursuant to Paragraph 30 for the Honouliuli WWTP, CCH shall comply with the requirements and interim effluent limits for TSS and BOD_5 set forth for the Honouliuli WWTP, notwithstanding any final effluent limitations for TSS and BOD_5 set forth in CCH's applicable NPDES permit for the Honouliuli WWTP; provided, however, that this Consent Decree shall not affect the force or effect of any other effluent limitations, or monitoring and reporting requirements, or any other terms and conditions of its applicable NPDES permit."*

Thus, technology-based effluent limitations based on secondary treatment standards established in this permit for BOD_5 and TSS are subject to the interim requirements established in the 2010 Consent Decree. A summary of the 2010 Consent Decree interim effluent limitations is provided in Attachment A to this Fact Sheet.

2. Water Quality-Based Effluent Limitations (WQBELs)

a. Scope and Authority

NPDES Regulations at 40 CFR 122.44(d) require permits to include WQBELs for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard (reasonable potential). As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level that will cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard."

The process for determining reasonable potential and calculating WQBELs, when necessary, is intended to protect the receiving waters as specified in HAR, Chapter 11-54. When WQBELs are necessary to protect the receiving waters, the DOH has followed the requirements of HAR, Chapter 11-54, the STCP, and other applicable State and federal guidance policies to determine WQBELs in the draft permit.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELS must be established in accordance with the requirements of 40 CFR 122.44(d)(1)(vi), using (1) EPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information.

b. Applicable Water Quality Standards

The beneficial uses and water quality standards that apply to the receiving waters for this discharge are from HAR, Chapter 11-54.

(1) HAR, Chapter 11-54. HAR, Chapter 11-54 specifies numeric aquatic life standards for 72 toxic pollutants and human health standards for 60 toxic pollutants, as well as narrative standards for toxicity. Effluent limitations and provisions in the draft permit are based on available information to implement these standards.

(2) Water Quality Standards. The facility discharges to the Mamala Bay, Pacific Ocean, which is classified as a marine Class A Wet Open Coastal Waters in HAR, Chapter 11-54. As specified in HAR, Chapter 11-54, saltwater standards apply when the dissolved inorganic ion concentration is above 0.5 parts per thousand. As such, a reasonable potential analysis (RPA) was conducted using saltwater standards. Additionally, human health water quality standards were also used in the RPA to protect human health. Where both saltwater standards and human health standards are available for a particular pollutant, the more stringent of the two will be used in the RPA.

40 CFR 122.45(c) requires effluent limitations for metals to be expressed as total recoverable metal. Since water quality standards for metals are expressed in the dissolved form in HAR, Chapter 11-54, factors or translators must be used to convert metal concentrations from dissolved to

total recoverable. Default EPA conversion factors were used to convert the applicable dissolved criteria to total recoverable.

(3) Receiving Water Hardness. HAR, Chapter 11-54 contains water quality criteria for six metals that vary as a function of hardness in freshwater. A lower hardness results in a lower freshwater water quality standard. The metals with hardness dependent standards include cadmium, copper, lead, nickel, silver, and zinc. Ambient hardness values are used to calculate freshwater water quality standards that are hardness dependent. Since saltwater standards are used for the RPA, the receiving water hardness was not taken into consideration when determining reasonable potential.

c. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44(d) require effluent limitations to control all pollutants which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. Assessing whether a pollutant has reasonable potential is the fundamental step in determining whether or not a WQBEL is required. Using the methods prescribed in EPA's *Technical Support Document for Water Quality-Based Toxics Control* (the TSD, EPA/505/2-90-001, 1991), the effluent data from Outfall Serial No. 001 were analyzed to determine if the discharge demonstrates reasonable potential. The RPA compared the effluent data with numeric and narrative water quality standards in HAR, Chapter 11-54-4. To determine reasonable potential for nutrients contained in HAR, Chapter 11-54-6, a direct comparison of the receiving water concentration at the edge of the ZOM was compared to the most stringent WQS.

(1) Reasonable Potential Analysis (RPA). The RPA for pollutants with WQS specified in HAR, Chapter 11-54-4, based on the TSD, combines knowledge of effluent variability as estimated by a coefficient of variation with the uncertainty due to a limited number of data to project an estimated maximum receiving water concentration as a result of the effluent. The estimated receiving water concentration is calculated as the upper bound of the expected lognormal distribution of effluent concentrations at a high confidence level. The projected maximum receiving water concentration, after consideration of dilution, is then compared to the WQS in HAR, Chapter 11-54 to determine if the pollutant has reasonable potential. The projected maximum receiving water concentration has reasonable potential if it cannot be demonstrated with a high confidence level that the upper bound of the lognormal distribution of effluent concentrations is below the receiving water standards.

Because the most stringent WQS for pollutants specified in HAR, Chapter 11-54-6 are provided as geometric means and exceedances of these WQS are less sensitive to effluent variability, the RPA was conducted by doing a direct comparison of the maximum effluent concentration to the most stringent applicable WQS.

(2) Effluent Data. The RPA was based on effluent monitoring data submitted to the DOH in DMRs from July 2007 through July 2012.

(3) Dilution. The STCP discusses dilution, defined as the reduction in the concentration of a pollutant or discharge which results from mixing with the receiving waters, for submerged and high-rate outfalls. The STCP states that minimum dilution is used for establishing effluent limitations based on chronic criteria and human health standards for non-carcinogens, and average conditions is used for establishing effluent limitations based on human health standards for carcinogens.

The fact sheet to the previous permit does not specify a known initial or average dilution, however based on the whole effluent toxicity limitation, an initial dilution of 159.7 appears to have been applied.

In EPA's January 2009 301(h) Waiver Tentative Decision Document for the facility, EPA re-evaluated the initial and average dilution for the facility using the EPA-approved model Visual Plumes. EPA's dilution assessment considered a total of 27 receiving water temperature and salinity depth profiles ranging from 1993 through November 2005, a mid-depth current speed of 3.2 cm/sec, and a estimated end-of-permit flow of 49.94 MGD. In EPA's review, the temperature and salinity depth profile producing the lowest initial dilution is from August 30, 2000 and resulted in an initial dilution of 118:1. Using the same 27 receiving water temperature and salinity depth profiles, a mid-depth current speed of 3.2 cm/sec, and an estimated average annual flow of 37.68 MGD, EPA calculated an average dilution of 412:1.

On February 1, 2013 the Permittee submitted a revised dilution study for the facility. A total of 60 model cases were evaluated to represent the 5-year interval from January 2012 through December 2016. The Permittee used recent quarterly receiving water data from 2007 through 2011 for the re-evaluation of dilution, and did not use the same receiving water profiles used by EPA. However, the Permittee did provide a comparison of the critical 2007 through 2011 vertical temperature and salinity profiles to the critical ambient profiles used by EPA (August 2000). The May 2011 vertical temperature profiles are almost identical to the August 2000 profiles in terms of vertical stratification and show greater salinity stratification than the August 2000 profile. Thus, the ambient profiles used by the Permittee appear to accurately capture critical vertical temperature and salinity profiles.

A constant effluent salinity of 0.8 ppt was used based on the maximum, and most conservative, of three observed effluent salinity values from September 2010. Recent daily effluent temperature data was used to determine monthly probability distributions of the daily average temperature, the 10th percentile lowest temperature values were used during the modeling effort. The 10th percentile provides a reasonably conservative value for determining initial dilution, and is consistent with critical design guidance provided in EPA's TSD, which states, "*The 10th percentile value from the cumulative frequency of each parameter should be used to define the period of minimal dilution.*" Additionally, the use of the 10th percentile is consistent with the ambient conditions explained in *EPA's Dilution Models for Effluent Discharges, 4th Edition (Visual Plumes)*.

Ambient current speed and direction data was obtained from a 200 foot buoy, which was sampled by the Permittee as a part of a detailed Acoustic Doppler Current Profiler monitoring program from February 2010 through January 2011. The 10th percentile current speed at each depth from the 200 foot buoy was used along with an average direction based on that observed at the 10th percentile current speed. Data indicate that current speed is much greater than that assumed by EPA and range between 15 cm/s and 47 cm/s.

For initial dilution calculations, peak flow values were estimated based on applying a peaking factor to projected mean monthly flows. Monthly flow values measured between 2007 and 2011 were projected by applying a 16.3 percent five-year increase to represent projected monthly mean flow during the permit. Monthly 3-hour peak flow values were determined using the hourly flow data from 2007 through 2011. For each month, a maximum value from the 3-hour moving averages of the hourly effluent were thereafter calculated as the ratio of the monthly 3-hour peak flows to the respective monthly averages. The peaking factors were then averaged for each month over the five year period. Thus, there were twelve peaking factors, one for each month. The product of the peaking factors and the projected monthly mean flows resulted in the monthly peak flow for the 60 model cases. An average dilution was calculated by averaging the dilution of the 60 model cases.

For average dilution, the facility design flow of 38 MGD was used, and is consistent with the specifications of the STCP.

The Permittee's revised dilution study resulted in an initial dilution of 144:1 and an average dilution of 472:1. The Permittee provided additional dilutions for the facility design flow minus reuse water, however the STCP does not provide for adjusted facility design flows based on reuse. The Permittee's revised dilution study recommends the use of 167.7:1 as an initial dilution, based on the 10th percentile of initial dilution results. However, the Permittee used model inputs representing the 10th percentile current speed and effluent temperature, thus using the 10th percentile initial dilution would be less conservative than using the 10th percentile value from the cumulative frequency of each parameter, and is not consistent with EPA guidance.

Due to the newly available ambient current data, the Permittee's February 1, 2013 revised dilution study appears to represent ambient conditions more accurately than previous dilution studies. An initial dilution of 144:1 and an average dilution of 472:1 have been used in the development of this permit.

(4) **Summary of RPA Results.** The maximum effluent concentrations from the DMRs over the current permit term and the NPDES Application Form 2C, maximum projected receiving water concentration after dilution calculated using methods from the TSD, the applicable HAR, Section 11-54-4(b)(3) and 11-54-6(b)(3) water quality standard, and result of the RPA for pollutants discharged from Outfall Serial No. 001 are presented in Table F-6, below. Only pollutants detected in the discharge are presented in Table F-6. All other pollutants were not detected and therefore, no reasonable potential exists.

Table F-6. Summary of RPA Results

Parameter	Units	Number of Samples	Dilution	Maximum Effluent Concentration	Maximum Projected Concentration	Applicable Water Quality Standard	RPA Results
Antimony, Total Recoverable	µg/L	5	117:1	0.95	0.028	15 000	No
Arsenic, Total Recoverable	µg/L	5	117:1	2.0	0.058	36	No
Beryllium, Total Recoverable	µg/L	5	411:1	0.0045	0.000040	0 038	No
Cadmium, Total Recoverable	µg/L	5	117:1	0.315	0.0092	9.4	No
Chromium VI, Total Recoverable	µg/L	5	117:1	4.0	0.12	50	No
Copper, Total Recoverable	µg/L	5	117:1	41	1.2	3.5	No
Cyanide, Total Recoverable	µg/L	5	117:1	1.1	0.04	1.0	No
Lead, Total Recoverable	µg/L	5	117:1	1.5	0.043	5.9	No
Mercury, Total Recoverable	µg/L	5	117:1	0.095	0.0028	0 025	No
Nickel, Total Recoverable	µg/L	5	117:1	4.3	0.12	8.4	No
Selenium, Total Recoverable	µg/L	5	117:1	4.9	0.141	71	No

Parameter	Units	Number of Samples	Dilution	Maximum Effluent Concentration	Maximum Projected Concentration	Applicable Water ~~Quality~~ Standard	RPA Results
Silver, Total Recoverable	µg/L	5	117:1	0.78	0.023	2.7	No
Thallium, Total Recoverable	µg/L	5	117:1	0.045	0.001	16	No
Zinc, Total Recoverable	µg/L	5	117:1	87	2.54	91	No
Acrolein	µg/L	5	117:1	0.80	0.023	18	No
Benzene	µg/L	5	411:1	0.20	0.0018	13	No
Bis(2-Ethylhexyl)Phthalate	µg/L	5	117:1	7.1	0.21	16,000	No
Chlordane	µg/L	5	411:1	0.053	0 00047	0.00016	Yes
Chloroform	µg/L	5	411:1	0.45	0.0040	5.1	No
Dieldrin	µg/L	5	411:1	0.023	0 00020	0.000025	Yes
Diethyl Phthalate	µg/L	5	117:1	4.3	0.12	590 000	No
Malathion	µg/L	5	117:1	0.057	0.002	0.10	No
Napthlelene	µg/L	5	117:1	5.8	0.2	780	No
Phenol	µg/L	5	117:1	4.7	0.14	170	No
Toluene	µg/L	5	117:1	2.3	0.07	2,100	No
Tributyltin	µg/L	5	117:1	0.02	0.0006	0 010	No
1,4-Dichlorobenzene	µg/L	5	117:1	2.0	0.06	660	No
DDT[1]	µg/L	5	411:1	0.002	0.000018	0.000008	Yes
Total Nitrogen	µg/L	[3]	–	106.5[2]	NA	150	No
Ammonia Nitrogen	µg/L	[3]	–	8.0[2]	NA	3.5	Yes
Nitrate + Nitrite Nitrogen	µg/L	[3]	–	2.2[2]	NA	5.0	No
Total Phosphorus	µg/L	[3]	–	9.11[2]	NA	20	No

1
2 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4-'DDE, 4,4'-DDD, and 2,4'-DDD.
2 Based on receiving water concentration at the edge of the ZOM.
3 Quarterly data for 5 years.

(5) Reasonable Potential Determination.

(a) Constituents with limited data. In some cases, reasonable potential cannot be determined because effluent data are limited. The draft permit requires the Permittee to continue to monitor for these constituents in the effluent using analytical methods that provide the lowest available detection limitations. When additional data become available, further RPAs will be conducted to determine whether to add numeric effluent limitations to this draft permit or to continue monitoring.

Data for the following parameters was not available:

Commented [TW2]: Based on 1 detected value which was a J-Flag. The duplicate taken at the same time was ND.

Commented [DC3]: DOH: We should discuss the use of this data point.

- Aluminum, Total Recoverable
- Chlorpyrifos
- 1,2,4,5-Trichlorobenzene
- PCBs
- Isoprophylchloroether
- Pyrrolidine-N
- Turbidity

(b) Pollutants with No Reasonable Potential. WQBELs are not included in this draft permit for constituents listed in HAR, Chapter 11-54-4.(3) and 11-54-6(b)(3) that do not demonstrate reasonable potential; however, monitoring for such pollutants is still required in order to collect data for future RPAs. Pollutants with no reasonable potential consist of those identified in Table F-6 or any pollutant not discussed in Parts D.2.c.(5).(a) or D.2.c.(5).(c) of this Fact Sheet.

The previous permit included an effluent limitation for chlorine effective only when the discharge is chlorinated. However, the facility does not use chlorine disinfection and chlorine was not detected in the effluent in four samples with an MDL of 0.02 mg/L. Therefore, this permit does not retain effluent limitations for chlorine at Outfall Serial No. 001. Anti-backsliding regulations at 40 CFR 122.44(l)(i) allow for effluent limitations in a reissued permit to be less stringent than the previous permit if information is available at the time of permit reissuance that wasn't available at the time the previous permit was adopted. The removal of the effluent limitation is based on the finding that the facility does not use chlorine disinfection and chlorine was not detected in the effluent.

(c) Pollutants with Reasonable Potential. The RPA indicated that chlordane, dieldrin, DDT, and ammonia nitrogen have reasonable potential to cause, or contribute to an excursion above state water quality standards. Further, due to the nature of the discharge (secondary treated wastewater), pathogens such as enterococcus are present in the effluent. Concentrations up to 110,000 CFU/100 mL have been observed in the effluent, which exceed the applicable single sample maximum criteria of 501 CFU/100 mL and the geometric mean criteria of 35 CFU/100 mL with dilution (72,144 and 5,040 CFU/100 mL). As such, reasonable potential for enterococcus has also been determined.

WQBELs have been established in this draft permit at Outfall Serial No. 001 for chlordane, dieldrin, DDT, ammonia nitrogen, and enterococcus. The RPA for each pollutant is discussed in more detail in Part D.2.d.3 of this Fact Sheet.

The RPA results for chlordane and dieldrin are consistent with the results of EPA's TDD in which EPA found the permittee would exceed WQS for chlordane and dieldrin.

The RPA results for ammonia nitrogen are consistent with the results of EPA's TDD in which EPA found, "the applicant has failed to demonstrate that it can consistently attain State water quality standards for ammonia nitrogen."

The WQBELs for toxics were calculated based on water quality standards contained in HAR, Chapter 11-54 and procedures contained in both STCP and HAR, Chapter 11-54, as discussed in Part D.2.d, below. WQBELs for nutrients are discussed below and are based on the standards contained in HAR, Chapter 11-54-6(b)(3).

d. WQBEL Calculations

Specific pollutant limits may be calculated for both the protection of aquatic life and human health.

(1) WQBELs based on Aquatic Life Standards. The STCP categorizes a discharge from a facility into one of four categories: (1) marine discharges through submerged outfalls; (2) discharges without submerged outfalls; (3) discharges to streams; or (4) high-rate discharges. Once a discharge has been categorized, effluent limitations for pollutants with reasonable potential can be calculated, as described below.

(a) For marine discharges through submerged outfalls, the daily maximum effluent limitation shall be the product of the chronic water quality standard and the minimum dilution factor;

(b) For discharges without submerged outfalls, the daily maximum effluent limitation shall be the acute toxicity standard. More stringent limits based on the chronic standards may be developed using Best Professional Judgment (BPJ);

(c) For discharges to streams, the effluent limitation shall be the most stringent of the acute standard and the product of the chronic standard and dilution; and

(d) For high rate outfalls, the maximum limit for a particular pollutant is equal to the product of the acute standard and the acute dilution factor determined according to Section II.B.4 of the STCP. More stringent limits based on chronic standards may be developed using BPJ.

(2) WQBELs based on Human Health Standards. The STCP specifies that the fish consumption standards are based upon the bioaccumulation of toxics in aquatic organisms followed by consumption by humans. Limits based on the fish consumption standards should be applied as 30-day averages for non-carcinogens using a dilution of 144:1 and annual averages for carcinogens using a dilution of 472:1.

The discharge from this facility is considered a marine discharge through a submerged outfall. Therefore, for pollutants with reasonable potential, the draft permit establishes, on a pollutant by pollutant basis, daily maximum effluent limitations based on saltwater chronic aquatic life standard after considering dilution and average monthly effluent limitations for non-carcinogens or annual average effluent limitations for carcinogens based on the human health standard after considering dilution. WQBELs established in the draft permit are discussed in detail below.

(3) Calculation of Pollutant-Specific WQBELs

As discussed in Part D.2.c.(3) of this Fact Sheet, a maximum initial dilution of 144:1 and an average initial dilution of 472:1 have been established.

The following equations were used to calculate reasonable potential for the pollutants below.

Projected Maximum RWC = MEC x $99\%_{ratio}$ x Dm

Where:

RWC	=	Receiving water concentration
MEC	=	Maximum effluent concentration reported
$99\%_{ratio}$	=	The 99% ratio from Table 3-1 in the TSD or calculated using methods in Section 3.3.2 of the TSD.
Dm	=	Percent Dilution (i.e., 144:1, or 0.69%, for chronic toxicity standards and human health standards for non-carcinogens, and 472:1, or 0.21% for human health standards for carcinogens)

If the projected maximum receiving water concentration is greater than the applicable water quality standard from HAR, Chapter 11-54, the reasonable potential exists for the pollutant and effluent limitations are established. Pollutants with reasonable potential are discussed below in detail.

(a) Chlordane

i. **Chlordane Water Quality Standards.** The most stringent applicable water quality standard for chlordane is the human health standard of 0.00016 µg/L, as specified in HAR, Chapter 11-54.

ii. **RPA Results.** The Permittee reported five data points for chlordane (n = 5), resulting in a CV = 0.6. Based on a CV of 0.6 and five samples, the 99% multiplier calculated using methods described in Section 3.3.2 of the TSD was 4.2. As discussed in Part D.2.c.(3), the facility is granted a dilution of 472:1 for human health carcinogens. Therefore, Dm = 0.21%.

The maximum effluent concentration for chlordane was 0.053 µg/L.

Projected Maximum RWC = MEC x $99\%_{ratio}$ x Dm
= (0.053 µg/L) x 4.2 x 0.0021
= 0.00047 µg/L

HAR 11-54 Water Quality Standard = 0.00016 µg/L

The projected maximum receiving water concentration (0.00047 µg/L) exceeds the most stringent applicable water quality standard for this pollutant (0.00016 µg/L), demonstrating reasonable potential. Therefore, the draft permit establishes effluent limitations for chlordane.

iii. **Chlordane WQBELs.** WQBELs for chlordane are calculated using STCP procedures and are based on the chronic aquatic life water quality standard and human health standard. The draft permit establishes a daily maximum effluent limitation for chlordane of 0.58 µg/L based on the chronic aquatic life water quality standard and a dilution of 144:1, and an annual average effluent limitation of 0.076 µg/L based on the human health standard for carcinogens and a dilution of 472:1.

iv. **Feasibility.** The maximum effluent concentration reported for chlordane during the term of the previous permit was 0.053 µg/L. Since the maximum effluent concentration is less than the proposed maximum daily effluent limitation of 0.58 µg/L, the DOH has determined that the facility will be able to comply with proposed maximum daily chlordane effluent limitations.

The maximum annual average concentration reported for chlordane during the term of the previous permit was 0.053 µg/L. Since the maximum annual average effluent concentration is less than the proposed annual average effluent limitation of 0.076 µg/L, the DOH has determined that the facility will be able to immediately comply with proposed annual average effluent limitation.

v. **Anti-backsliding.** Anti-backsliding regulations are satisfied because effluent limitations were not established in the previous permit for chlordane, thus these limitations are at least as stringent as the effluent limitations established in the previous permit.

(b) Dieldrin

i. **Dieldrin Water Quality Standards.** The most stringent applicable water quality standard for dieldrin is the human health standard of 0.000025 µg/L, as specified in HAR, Chapter 11-54.

ii. **RPA Results.** The Permittee reported five data points for dieldrin (n = 5), resulting in a CV = 0.6. Based on a CV of 0.6 and five samples, the 99% multiplier calculated using methods described in Section 3.3.2 of the TSD was 4.2. As discussed in Part D.2.c.(3), the facility is granted a dilution of 472:1 for human health carcinogens. Therefore, Dm = 0.21%.

The maximum effluent concentration for dieldrin was 0.023 µg/L.

Projected Maximum RWC = MEC x 99%$_{ratio}$ x Dm
= (0.023 µg/L) x 4.2 x 0.0021
= 0.00020 µg/L

HAR 11-54 Water Quality Standard = 0.000025 µg/L

The projected maximum receiving water concentration (0.00020 µg/L) exceeds the most stringent applicable water quality standard for this pollutant (0.000025 µg/L), demonstrating reasonable potential. Therefore, the draft permit establishes effluent limitations for dieldrin.

iii. **Dieldrin WQBELs.** WQBELs for dieldrin were calculated using STCP procedures and are based on the chronic aquatic life water quality standard and human health standard. The draft permit establishes a daily maximum effluent limitation for dieldrin of 0.27 µg/L based on the chronic aquatic life water quality standard and a dilution of 144:1, and an annual average effluent limitation of 0.012 µg/L based on the human health standard for carcinogens and a dilution of 472:1.

iv. **Feasibility.** The maximum effluent concentration reported for dieldrin during the term of the previous permit was 0.023 µg/L. Since the maximum effluent concentration is less than the proposed maximum daily effluent limitation of 0.27 µg/L, the DOH has determined that the facility will be able to comply with proposed maximum daily dieldrin effluent limitations.

The maximum annual average concentration reported for dieldrin during the term of the previous permit was 0.023 µg/L. Since the maximum annual average effluent concentration is greater than the proposed annual average effluent limitation of 0.012 µg/L, the facility may not be able to immediately comply with proposed annual average effluent limitation.

v. **Anti-backsliding.** Anti-backsliding regulations are satisfied because effluent limitations were not established in the previous permit for dieldrin, thus these limitations are at least as stringent as the effluent limitations established in the previous permit.

(c) DDT

i. **DDT Water Quality Standards.** The most stringent applicable water quality standard for DDT is the human health standard of 0.000008 µg/L, as specified in HAR, Chapter 11-54.

ii. **RPA Results.** The Permittee reported five data points for DDT (n = 5), resulting in a CV = 0.6. Based on a CV of 0.6 and five samples, the 99% multiplier from Table 3.1 of the TSD was 4.2. As discussed in Part D.2.c.(3), the facility is granted a dilution of 472:1 for human health carcinogens. Therefore, Dm = 0.21%.

The maximum effluent concentration for DDT was 0.002 µg/L.

Projected Maximum RWC	=	MEC x $99\%_{ratio}$ x Dm
	=	(0.002 µg/L) x 4.2 x 0.0021
	=	0.000018 µg/L

HAR 11-54 Water Quality Standard = 0.000008 µg/L

The projected maximum receiving water concentration (0.000018 µg/L) exceeds the most stringent applicable water quality standard for this pollutant (0.000008 µg/L), demonstrating reasonable potential. Therefore, the draft permit establishes effluent limitations for DDT.

iii. **DDT WQBELs.** WQBELs for DDT were calculated using STCP procedures and are based on the chronic aquatic life water quality standard and human health standard. The draft permit establishes a daily maximum effluent limitation for DDT of 0.14 µg/L based on the chronic aquatic life water quality standard and a dilution of

144:1, and an annual average effluent limitation of 0.004 µg/L based on the human health standard for carcinogens and a dilution of 472:1.

iv. **Feasibility.** The maximum effluent concentration reported for DDT during the term of the previous permit was 0.002 µg/L. Since the maximum effluent concentration is less than the proposed maximum daily effluent limitation of 0.14 µg/L, the DOH has determined that the facility will be able to comply with proposed maximum daily DDT effluent limitations.

The maximum annual average concentration reported for DDT during the term of the previous permit was 0.002 µg/L. Since the maximum annual average effluent concentration is less than the proposed annual average effluent limitation of 0.004 µg/L, the DOH has determined that the facility will be able to immediately comply with proposed annual average effluent limitation.

v. **Anti-backsliding.** Anti-backsliding regulations are satisfied because the previous permit did not establish effluent limitations for DDT.

e. Nutrients

(1) Ammonia Nitrogen

HAR, Chapter 11-54-6(b)(3) establishes the following WQS for ammonia nitrogen:

Parameter	Geometric Mean	Value not to exceed more than 10% of the time	Value not to exceed more than 2% of the time
Ammonia Nitrogen (µg/L)	3.50	8.50	15.00

As demonstrated in Table F-6 of this Fact Sheet, reasonable potential to exceed applicable WQS for ammonia nitrogen has been determined. This finding is consistent with EPA's TDD, which found, based on receiving water data, that, "[the Permittee] has failed to demonstrate that it can consistently attain State water quality standards for ammonia nitrogen."

Zone of mixing data from March 2007 through July 2012 indicate that assimilative capacity is available for ammonia nitrogen in the receiving water. Assimilative capacity was determined as specified below:

(1) Review EPA's 303(d) list to determine if the water body is impaired for nitrate + nitrite.

The water body is not listed in EPA's 303(d) list for ammonia nitrogen.

(2) Identify nearby control stations to determine the "decision unit" for analysis.

Control Stations HB1, HB6, and HB7 are the available reference station and have been identified as the applicable control stations for evaluating assimilative capacity and constitutes the decision unit for the analysis.

(3) Data from all stations (including surface, middle, and bottom) are aggregated together to represent the decision unit and generate annual geomeans. To ensure adequate assimilative capacity, the highest annual geomean for the decision unit shall not exceed 90 percent of the applicable WQS.

The resulting geomeans were:

Year	Result (µg/L)
2007	1.9
2008	1.8
2009	1.6
2010	2.8
2011	1.6
2012	1.0

The highest annual geomean for the decision unit of 2.8 µg/L is less than 90 percent of the applicable WQS (3.15 µg/L). Assimilative capacity appears to be present in the receiving water.

(4) Consider other available information if available, including studies, reports, and receiving water data trends.

Information is not currently known that would result in the removal of assimilative capacity for ammonia nitrogen. An apparent trend of increasing concentration within the receiving water at the reference station does not appear present. The Permittee shall be required to conduct a ZOM dilution study to establish available dilution at the edge of the ZOM and verify that assimilative capacity within the receiving water exists for ammonia nitrogen.

Because the assimilative capacity at the edge of the ZOM is not currently known, end-of-pipe water quality-based effluent limitations can not be determined. However, WQS exceedances at the edge of the ZOM occurred over the previous permit term, indicating that current effluent concentrations have the potential to exceed the available dilution for ammonia nitrogen. In the absence of a known assimilative capacity within the ZOM, and in addition to applicable receiving water limitations and requirements to evaluate available dilution at the edge of the ZOM, this permit establishes performance-based effluent limitations for ammonia nitrogen to minimize the potential for WQS exceedances within the receiving water.

Effluent data for ammonia nitrogen is limited to three monitoring events, with an MEC of 22,400 µg/L reported with the NPDES permit renewal application. When there are less than 10 sampling data points available, the TSD recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Because there are less than 10 sampling points, the interim daily maximum effluent limitation has been based on 3.11 times the MEC.

A performance-based single sample effluent limitation of 69,700 µg/L has been established based on the maximum effluent concentration observed over the previous permit term. Further, receiving water limitations based on the standards established in HAR, Chapter 11-54-6(b)(3) have been established in this permit.

Commented [DC4]: It should be noted that we do have a dilution value for the edge of the ZOM provided by the Permittee. There's an average dilution of 582:1 at the edge of the ZOM. We could also use this to establish limits, but it's not consistent with what we've done in other permits and the resulting limit is not immediately achievable by the Permittee. However, we could add a compliance schedule in for ammonia nitrogen without too much trouble. I could do it in a day at your request.

Please let me know if you'd like to discuss further.

Anti-backsliding regulations are satisfied because the effluent limitations were not established in the previous permit for ammonia nitrogen, thus these limitations are at least as stringent as the previous permit.

f. pH

The Permittee was previously granted a ZOM for pH to comply with water quality standards for open coastal waters in HAR, Section 11-54-6(b)(3). The technology-based effluent limitations of between 6.0 to 9.0 at all times appears to be protective of water quality outside the ZOM and has been carried over.

g. Enterococcus

The discharge consists of treated sewage which may contain pathogens at elevated concentrations if not properly disinfected, sufficient to impact human health or the beneficial uses of the receiving water. To ensure the protection of human health, this permit establishes effluent limitations for enterococcus.

HAR, Section 11-54-8(b) establishes water quality objectives for marine recreational waters within 300 meters (1,000 feet) of shore. As discussed in Part E.3. of this Fact Sheet, the draft permit establishes receiving water limitations for marine recreational waters within 300 meters (1,000 feet) from shore based on State regulations contained in HAR, Chapter 11-54. Federal regulations at 40 CFR 131.41(c)(2) establish water quality standards for bacteria in marine waters based on CWA Section 304(a). 40 CFR 122.44(d)(1)(vi)(B) states that where a State has not established a water quality criterion for a specific pollutant with reasonable potential, the permitting authority must establish effluent limitations on a case-by-case basis, using EPA's water quality criteria published under Section 304(a) of the CWA. 40 CFR 131.41(e)(2) specifies that this criteria is applicable to Hawaii, except for coastal recreation waters within 300 meters of the shoreline. Since Outfall Serial No. 001 is beyond 300 meters (1,000 foot) from shore, there is no applicable State water quality objective for the discharge and federal criteria is applicable.

The discharge to the receiving water occurs approximately greater than 1.65 miles from shore (~8,760 feet) and it's use is not consistent with that at a bathing beach or used frequently during the recreation season. Immediate contact or use of the receiving water in the vicinity of the discharge is rarely expected to occur. The receiving water use is consistent with "infrequent use coastal recreation waters", as defined at 40 CFR 131.41(a)(5).

The applicable single sample maximum criteria for marine waters defined as infrequent use coastal recreation waters is 501 CFU/100 mL.

Receiving water data from July 2007 through October 2012 indicate that there was a concentration of enterococcus detected at 506 CFU/100mL at station HM4, however the receiving water data indicates that water quality objectives are generally met at the edge of the zone of mixing. Consistent with 3.3 of EPA's TSD, the regulatory authority should consider additional information discussed under Section 3.2 (i.e., type of industry, type of POTW, type of receiving water and designated uses, ect.) when evaluating reasonable potential. Reasonable potential can be determined without effluent or receiving water exceedances of applicable water quality criteria. Because the facility is a POTW, and pathogens are characteristic of treated municipal wastewater, and the beneficial uses of the receiving water include recreation where human contact may occur, reasonable potential for enterococcus has been determined.

Commented [DC5]: Elizabeth has suggested included entero data in RPA table, however I'm concerned this will just support not including limits for entero. RP for entero is based on the type of the facility, not receiving water data nor effluent data. Please let me know if you'd like this info summarized in the RPA table.

Instead of placing it in the table, I have added this text.

The draft permit establishes the following end-of-pipe effluent limitations and monitoring requirements for enterococcus at Outfall Serial No. 001 based on 40 CFR 131.41(c)(2). Although the human contact with the receiving water may be infrequent, human contact within the zone of mixing may occur. Illness from exposure to pathogens may occur at concentrations within the mixing zone, thus for the protection of human health due to the potential for acute illness from pathogens, the minimum initial dilution of 144:1 was used to calculate applicable WQBELs for enterococcus. Initial dilution at 144:1 is expected to occur prior to the plume surfacing, where most human contact would be expected.

(1) Due to the potential for human contact within the receiving water, a geometric mean of 5,040 CFU per 100 milliliters, based on the geometric mean of 35 CFU per 100 milliliters and a minimum initial dilution of 144:1. Based on effluent data from July 2007 through July 2012, the minimum reported enterococcus concentration was 110,000 CFU per 100 milliliters, indicating that the Permittee has reasonable potential to cause or contribute to an exceedance of water quality. This finding is consistent with EPA's TDD, which found, based on receiving water data, that, "[*the Permittee] has not shown that it can consistently State water quality standards beyond the zone of initial dilution…for bacteria (enterococcus).*" Thus, the monthly geometric mean of 5,040 CFU per 100 milliliters has been applied as an effluent limitation in the proposed permit.

Commented [DC6]: We should talk about the use of the initial dilution for this. This is what Elizabeth asked me to do with Sand Island, so I did it here as well. Permittee is not pleased. Lets talk about this.

(2) Considering the applicable single sample maximum for coastal recreation waters of 501 CFU per 100 milliliters and a minimum dilution of 144:1, the resulting WQBEL is 72,144 CFU per 100 milliliters. Based on effluent data from July 2007 through July 2012, the minimum reported enterococcus concentration was 110,000 CFU per 100 milliliters, indicating that the Permittee has reasonable potential to cause or contribute to an exceedance of water quality. This finding is consistent with EPA's TDD, which found, based on receiving water data, that, "*[the Permittee] has not shown that it can consistently State water quality standards beyond the zone of initial dilution…for bacteria (enterococcus).*" Thus, the single sample maximum of 72,144 CFU per 100 milliliters has been applied as an effluent limitation in the proposed permit.

Based on effluent data from July 2007 through July 2012, the MEC is 5,500,000 CFU/100 mL and the highest monthly geometric mean was 668,000 CFU/100 mL. It does not appear the Permittee can immediately comply with the effluent limitations for enterococcus. Consistent with HAR 11-55-21, this permit establishes a compliance schedule for the Permittee to comply with final effluent limitations for enterococcus by June 1, 2024.

The schedule of compliance is being proposed for a parameter that was not limited at the proposed level in the previous permit and the existing discharge is not expected to comply with the proposed limitations. Final compliance will ultimately require the implementation of an unidentified treatment technology, with unknown implementation and operations costs. Necessary facility upgrades are expected to include costly and time extensive upgrades. Sufficient time to select the preliminary preferred alternative, conduct pilot testing, engineering design, permitting, construction, and optimization and testing is not available prior to the effective date of this permit. Thus, a compliance schedule is necessary.

The Permittee is currently subject to the 2010 Consent Decree, which requires the Permittee to upgrade the facility to meet secondary treatment standards for BOD_5 and TSS by June 1, 2024. To minimize cost, increase the efficiency in both the planning and construction of the necessary facility upgrades, and increase treatment efficiency, the planning and construction of the facility upgrades necessary to comply with the final enterococcus limitations should be performed in concert with the 2010 Consent Decree required upgrades. Requiring facility upgrades independent of the 2010 Consent Decree upgrades may result in an unwarranted economic burden to the Permittee, require additional modifications to the selected treatment technology, reduce the treatment efficiency, and/or increase the operational costs of the selected technology. Thus, compliance dates and activities have been selected that are consistent with those established in the 2010 Consent Decree, and represent the minimum reasonable time frame to comply with the final effluent limitations. As such, the compliance schedule requires compliance as soon as possible, consistent with the requirements of 40 CFR 122.47(a)(1). DOH believes that the schedule and milestones as described in the proposed permit will achieve compliance with the final effluent limits as soon as possible.

Commented [DC7]: Not sure about wording, but can't think of a better way to phrase.

HAR, Section 11-55-21(b) states, "When a schedule specifies compliance longer than one year after permit issuance, the schedule of compliance shall specify interim requirements and the dates for their achievement and in no event shall more than one year elapse between interim dates. If the time necessary for completion of interim requirement (such as the construction of a treatment facility) exceeds one year and is not readily divided into stages for completion, the schedule shall specify interim dates for the submission of reports of progress towards completion of the interim requirements."

During the compliance schedule, the Permittee is required to maintain current treatment capability. Interim effluent limitations for enterococcus have been established until the final effluent limitations become effective. Interim effluent limitations have been developed based on observed effluent data over the recent permit-term. There are 1,856 daily effluent data points from July 1, 2007 through July 31, 2012. The use of the observed MEC (5,500,000 CFU/100 mL) for the basis of an interim daily maximum limitation is not reasonable, as the MEC is over 21.3 standard deviations over the mean, and the next highest effluent result (1,700,000 CFU/100 mL) is less than 31 percent of the MEC. Consistent with guidance provided in EPA's TSD, interim daily maximum and monthly geometric mean effluent limitations have been calculated based on the 99^{th} and 95^{th} percentile of an assumed lognormal distribution.

Thus, a single sample maximum interim effluent limitation for enterococcus of 1,155,089 CFU/100 mL, and a monthly geometric mean effluent limitation of 898,087 CFU/100 mL has been established in this permit.

As previously discussed, effluent data indicate that the Permittee can not immediately comply with the proposed effluent limitations for enterococcus, anticipated upgrades necessary to comply with the final effluent limitations may not be implemented prior to the effective date of the permit, a compliance schedule that represents the minimum time period for compliance has been established, and interim effluent limitations have been established that require the Permittee to maintain current treatment capabilities. The proposed schedule of compliance is in accordance with HAR, Section 11-55-21(b) and 40 CFR 122.47.

Anti-backsliding regulations are satisfied because effluent limitations were not established in the previous permit for enterococcus, thus these limitations are at least as stringent as the previous permit.

h. Whole Effluent Toxicity (WET)

WET limitations protect receiving water quality from the aggregated toxic effect of a mixture of pollutants in an effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent or receiving water. The WET approach allows for protection of the narrative criterion specified in HAR, Chapter 11-54-4(b)(2) while implementing Hawaii's numeric WQS for toxicity. There are two types of WET tests – acute and chronic. An acute toxicity test is conducted over a short period of time and measures mortality. A chronic toxicity test is generally conducted over a longer period of time and may measure mortality, reproduction, or growth.

The previous permit established a chronic WET effluent limitation at Outfall Serial No. 001 for *Ceriodaphnia dubia* and *Tripneustes gratilla*.

Whole effluent toxicity data for the time period from July 2007 to July 2012 using the test species *C. dubia* did not result in an exceedance of the chronic toxicity effluent limitation; however, whole effluent toxicity testing during the same period for *T. gratilla* exceeded the effluent limitation for chronic toxicity of 159.7 TU_c established in the previous permit for Outfall Serial No. 001, with effluent results as high as >625 TU.

A chronic WET effluent limitation has been established at Outfall Serial No. 001. For improved WET analysis, DOH has begun implementing EPA's Test of Significant Toxicity Method (TST) for WET effluent limitations within the State. As such, the chronic WET effluent limitation at Outfall Serial No. 001 has been revised to be consistent with the TST method using *T. gratilla*.

T. gratilla is a native species to Hawaii, and as observed in historic effluent data, *T. gratilla* is more sensitive to potential toxic pollutants within the Permittee's effluent than *C. dubia*. The use of *T. gratilla* is representative of toxic impacts on local species.

Test procedures for measuring toxicity to marine organisms of the Pacific Ocean, including T.gratilla, are not provided at 40 CFR 136. Consistent with the Preamble to EPA's 2002 Final WET Rule, permit writers may include (under 40 CFR 122.41(j)(4) and 122.44(i)(iv)) requirements for the use of test procedures that are not approved at 40 CFR Part 136 on a permit-by-permit basis. The use of alternative methods for West coast facilities in Hawaii is further supported under 40 CFR 122.21(j)(5)(viii), which states, "West coast facilities in…, Hawaii,… are exempted from 40 CFR [P]art 136 chronic methods and must use alternative guidance as directed by the permitting authority."

EPA has issued applicable guidance for conducting chronic toxicity tests using T. gratilla in Hawaiian Collector Urchin, Tripneustes gratilla (Hawa'e) Fertilization Test Method (Adapted by Amy Wagner, EPA Region 9 Laboratory, Richmond, CA from a method developed by George Morrison, EPA, ORD Narragansett, RI and Diane Nacci, Science Applications International Corporation, ORD Narragansett, RI) (EPA/600/R-12/022).

As previously discussed, reasonable potential for WET has been determined for Outfall Serial No. 001 and an effluent limitation must be established in accordance with 40 CFR 122.44(d)(1). Further, a WET effluent limitation and monitoring are necessary to ensure compliance with applicable WQS in HAR, Chapter 11-54-4(b)(2).

The proposed WET limitation and monitoring requirements are incorporated into the draft permit in accordance with the EPA national policy on water quality-based permit limitations for toxic pollutants issued on March 9, 1984 (49 FR 9016), HAR, Section 11-54-4(b)(2)(B), and EPA's National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010).

Consistent with HAR, Chapter 11-54-4(b)(2)(B), this permit establishes a chronic toxicity effluent limitation based on the TST hypothesis testing approach. The TST approach was designed to statistically compare a test species response to the in-stream waste concentration (IWC) and a control.

For continuous discharges through submerged outfalls, HAR 11-54-4(b)(4)(A) requires the no observed effect concentration (NOEC), expressed as a percent of effluent concentration, to not be less than 100 divided by the minimum dilution. The following equation is used to calculate the IWC where dilution is granted (Outfall Serial No. 001):

IWC = 100/critical dilution factor

= 100/144

= 0.69%

For any one chronic toxicity test, the chronic WET permit limit that must be met is rejection of the null hypothesis (Ho):

IWC (percent effluent) mean response ≤ 0.75 × Control mean response.

A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail"

The acute and chronic biological effect levels (b values of 20% and 25%, respectively) incorporated into the TST define EPA's unacceptable risks to aquatic organisms and substantially decrease the uncertainties associated with the results obtained from EPA's traditionally used statistical endpoints for WET. Furthermore, the TST reduces the need for multiple test concentrations which, in turn, reduces laboratory costs for Permittees while improving data interpretation. A significant improvement offered by the TST approach over traditional hypothesis testing is the inclusion of an acceptable false negative rate. While calculating a range of percent minimum significant differences (PMSDs) provides an indirect measure of power for the traditional hypothesis testing approach, setting appropriate levels for β and α using the TST approach establishes explicit test power and provides motivation to decrease within test variability which significantly reduces the risk of under reporting toxic events (USEPA 2010[1]).

Taken together, these refinements simplify toxicity analyses, provide Permittees with the positive incentive to generate high quality data, and afford effective protection to aquatic life.

A WET effluent limitation based on the TST hypothesis testing approach is protective of the WQS for toxicity contained in HAR, Section 11-54-4(b)(4)(B) and is not considered to be less stringent. Use of the TST approach is consistent with the requirements of State and federal anti-backsliding regulations.

i. Summary of Final Effluent Limitations

In addition to the effluent limitations specified above, HAR, Section 11-55-20 requires that daily quantitative limitations by weight be established where possible. Thus, in addition to concentration based-effluent limitations, mass-

[1] U.S. Environmental Protection Agency. 2002a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (5th Edition). EPA 821-R-02-012. Washington, DC: Office of Water.

based effluent limitations (in pounds per day) have been established where applicable based on the following formula:

lbs/day = 8.34 * concentration (mg/L) * flow (MGD)

40 CFR 122.45(b)(1) requires that mass-based effluent limitations for POTWs be based on design flow. The previous permit established mass based effluent limitations on the facility design flow of 25 MGD, which was the design flow at the time the previous permit was adopted. In December 1992, an expansion was completed, increasing the design capacity of the facility to 38 MGD, its current design flow rate. For BOD_5 and TSS, the draft permit establishes mass-based effluent limitations using the current design capacity of 38 MGD. Since secondary effluent limitations for BOD_5 and TSS are established in the draft permit and are more stringent than the previous permit, mass-based effluent limitations based on 38 MGD are more stringent than the previous permit and therefore meet applicable anti-backsliding and antidegradation requirements, as discussed in Part D.2.j and D.2.k of this Fact Sheet.

Consistent with 40 CFR 122.45(b), mass-based effluent limitations for chlordane, DDT and dieldrin are based on a flow of 38 MGD. Because the previous permit did not establish effluent limitations for chlordane, DDT, and dieldrin, the resulting mass-based effluent limitation satisfies anti-degradation requirements.

The following table lists final effluent limitations contained in the draft permit and compares them to effluent limitations contained in the previous permit.

Table F-7. Summary of Final Effluent Limitations – BOD_5 and TSS

Parameter	Units	Effluent Limitations Contained in the Previous Permit			Proposed Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	160[1]	240[1]	--	30	45	--
	lbs/day	33,487[2]	50,230[2]	--	9,508[3]	14,261[3]	--
	% Removal	As a monthly average, not less than 30 percent removal efficiency from the influent stream.			The average monthly percent removal shall not be less than 85 percent.		
Total Suspended Solids (TSS)	mg/L	95[1]	142[1]	--	30	45	--
	lbs/day	19,882[2]	29,720[2]	--	9,508[3]	14,261[3]	--
	% Removal	As a monthly average, not less than 60 percent removal efficiency from the influent stream.			The average monthly percent removal shall not be less than 85 percent.		

[1] Effluent limitations contained in the previous permit and effective through December 2010. These effluent limitations were replaced with interim effluent limitations in the December 2010 United States of America v. City and County of Honolulu Consent Decree (2010 Consent Decree).

[2] Based on a design flow of 25 MGD.

[3] Based on a design flow of 38 MGD.

Table F-8. Summary of Final Effluent Limitations – All Other Pollutants

Parameter	Units	Effluent Limitations Contained in the Previous Permit			Proposed Effluent Limitations		
		Average Annual	Average Monthly	Average Daily	Average Annual	Average Monthly	Maximum Daily
Enterococci	CFU/100 ml	--	--	--	--	5,040[1,3]	72,144[2,3]
pH	standard units	Not less than 6.0 and not greater than 9.0			Not less than 6.0 and not greater than 9.0		
Chronic Toxicity – *Ceriodaphnia Dubia*	TUc	--	--	159.7	--	--	--
Chronic Toxicity – *Tripneustes Gratilla*	TUc	--	--	159.7	--	--	Pass[4]
Ammonia Nitrogen	mg/L	--	--	--	--	--	69.7
	lbs/day	--	--	--	--	--	22,089
Chlordane	µg/L	--	--	--	0 076	--	0.58
	lbs/day	--	--	--	0 024	--	0.184
Dieldrin	µg/L	--	--	--	0 012	--	0.27
	lbs/day	--	--	--	0 004	--	0.086
DDT[5]	µg/L	--	--	--	0.004	--	0.14
	lbs/day	--	--	--	0 001	--	0.044
Total Residual Chlorine	µg/L	--	--	1.0	--	--	--

1 Effluent limitation expressed as a monthly geometric mean.
2 Effluent limitation expressed as a single sample maximum.
3 Interim effluent limitations have been established for Enterococci. Interim effluent limitations include a monthly geometric mean of 898,087 CFU/100 mL and a single sample maximum of 1,155,089 CFU/100 mL. The Permittee must comply with final effluent limitations by June 1, 2024.
4 "Pass", as described in Part D.2.h of this Fact Sheet.
5 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4-'DDE, 4,4'-DDD, and 2,4'-DDD.

j. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA Sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

Federal anti-backsliding regulations at 40 CFR 122.44(l)(i) allows for effluent limitations in a reissued permit to be less stringent if information is available which was not available at the time of the permit issuance and which have justified the application of a less stringent effluent limitation. The draft permit does not retain the effluent limitation for chlorine because the facility does not use chlorine disinfection and chlorine was not detected in the effluent in four samples during the term of the previous permit. As discussed in Part D.2.c.(5)(b) of this Fact Sheet, these new effluent limitations are consistent with State and federal anti-backsliding regulations because the removal of effluent limitations are based on new information that was not available during the drafting of the previous permit. Effluent limitations and requirements for all other pollutants are at least as stringent as those in the previous permit and are consistent with State and federal anti-backsliding regulations.

k. Satisfaction of Antidegradation Policy Requirements

The DOH established the State antidegradation policy in HAR, Section 11-54-1.1, which incorporates the federal antidegradation policy at 40 CFR 131.12. HAR, Section 11-54-1.1 requires that the existing quality of waters be maintained unless degradation is justified based on specific findings demonstrating that allowing lower water quality is necessary to accommodate economic or social development in the area in which the waters are located. The draft permit establishes mass-based effluent limitations for BOD_5 and TSS based on a flow of 38 MGD, an increase from 25 MGD in the previous permit. However, despite the increase, mass-based effluent limitations for BOD_5 and TSS are more stringent than the previous permit because the draft permit establishes secondary treatment standards which are more stringent than the previous permit, thus no increase in mass loading of BOD_5 and TSS to the receiving water is permitted. As such, the DOH has determined that the impact of the new effluent limitation will be insignificant on the receiving water and the level of water quality necessary to protect the existing uses will be maintained and protected.

The permitted discharge is consistent with antidegradation provisions of 40 CFR 131.12 and HAR, Section 11-54-1.1. The impact on existing water quality will be insignificant and the level of water quality necessary to protect the existing uses will be maintained and protected.

E. Rationale for Receiving Water and Zone of Mixing Requirements

1. Summary of ZOM Water Quality Standards and Monitoring Data

The following are effluent quality monitoring results for HAR, Chapter 11-54, specific water quality criteria parameters that were provided in the ZOM Application on July 8, 2011, and applicable ZOM water quality criteria from 11-54-6(b)(3).

Table F-9. ZOM Monitoring Data

Parameter	Units	Applicable Water Quality Standard	Maximum Reported Concentration[1]
Total Nitrogen	µg/L	150[2]	33,400
Ammonia Nitrogen	µg/L	3.5[2]	17,500
Nitrate + Nitrite	µg/L	5.0[2]	2,200
Orthophosphate Phosphorus	µg/L	--	3,300
Total Phosphorus	µg/L	20[2]	4,500
Chlorophyll a	µg/L	0.30[2]	1.6

Parameter	Units	Applicable Water Quality Standard	Maximum Reported Concentration[1]
Turbidity	NTU	0.50[2]	49
TSS	mg/L	--	28
pH	standard units	[3]	7.1
Dissolved Oxygen	mg/L	[4]	1.6
Temperature	°C	[5]	27
Salinity	ppm	[6]	700

1 Source: ZOM Application dated July 8, 2011.
2 Water quality standard expressed as a geometric mean.
3 pH shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain, or groundwater discharge may depress the pH to a minimum level of 7.0.
4 Dissolved oxygen shall not be less than 75 percent saturation.
5 Temperature shall not vary more than 1° Celsius from ambient conditions.
6 Salinity shall not vary more than 10 percent from natural or seasonal changes considering hydrologic input and oceanographic factors.

2. Existing Receiving Water Limitations and Monitoring Data

a. Shoreline Stations

The following are a summary of the geometric mean values calculated from each shoreline monitoring location, reported in the monthly DMRs from February 2010 through June 2011.

Table F-10. Shoreline Monitoring Stations

Station	Geometric Mean[1] Enterococcus CFU/100 mL
S1	5.7
S2	3.6
S3	2.9
S4	2.6
Applicable Water Quality Standard	[2]

1 Source: Monthly DMR's submitted by the Permittee from July 2007 through October 2012. Reported geometric mean is the maximum annual geometric mean reported at each monitoring station.
2 The water quality standard during the drafting of the previous permit was a geometric mean of 7 CFU/100 mL. The water quality standard established in HAR 11-54 during the drafting of the draft permit is a geometric mean of 35 CFU/100 mL.

b. Nearshore Stations

The following are a summary of the geometric mean values calculated from each nearshore monitoring location, reported in the monthly and quarterly DMRs from July 2007 through October 2012.

Table F-11. Nearshore Monitoring Stations

Station	Highest Annual Geometric Mean[1]						
	Enterococcus[2]	Nitrate + Nitrite Nitrogen[2]	Ammonia Nitrogen[2]	Total Nitrogen[2]	Total Phosphorus[2]	Turbidity[2]	Chlorophyll a[2]
	CFU/100 mL	µg/L	µg/L	µg/L	µg/L	NTU	µg/L
HN1	1.0	NR	NR	NR	NR	0.48	NR
HN2	2.7	NR	NR	NR	NR	0.34	NR
HN3	2.1	NR	NR	NR	NR	0.36	NR
HN4	1.5	NR	NR	NR	NR	0.59	NR
Applicable Water Quality Standard	[3]	5.0	3.5	150	20	0.50	0.30

NR = Not Reported
1 Source: Monthly and Quarterly DMR's submitted by the Permittee from July 2007 through October 2012.
2 Reported geometric mean is the maximum annual geometric mean from the top, middle, and bottom sampling points at each station.
3 The water quality standard during the drafting of the previous permit was a geometric mean of 7 CFU/100 mL. The water quality standard established in HAR 11-54 during the drafting of the draft permit is a geometric mean of 34 CFU/100 mL.

c. Offshore Stations

The following are a summary of the geometric mean values calculated from each offshore monitoring location, reported in the monthly and quarterly DMRs from July 2007 through October 2012.

Table F-12. Offshore Monitoring Stations

Station	Highest Annual Geometric Mean[1]						
	Enterococcus[2]	Nitrate + Nitrite Nitrogen[2]	Ammonia Nitrogen[2]	Total Nitrogen[2]	Total Phosphorus[2]	Turbidity[2]	Chlorophyll a[2]
	CFU/100 mL	µg/L	µg/L	µg/L	µg/L	NTU	µg/L
HB1	4.3	1.4	2.3	100	8.3	0.36	0.21
HB2	132	1.8	2.9	96	8.6	0.30	0.18
HB3	74	1.8	3.2	101	8.1	0.32	0.18
HB4	989	1.6	5.1	106	8.4	0.30	0.18
HB5	739	1.5	7.4	107	9.3	0.32	0.18
HB6	211	1.5	4.3	97	8.1	0.26	0.15
HB7	2.6	1.2	2.3	97	7.5	0.46	0.16
HM1	188	1.4	5.5	107	9.1	NR	0.29
HM2	85	1.5	3.1	99	8.2	NR	0.18
HM3	36	2.2	3.0	97	8.5	NR	0.17

Station	Highest Annual Geometric Mean[1]						
	Enterococcus[2]	Nitrate + Nitrite Nitrogen[2]	Ammonia Nitrogen[2]	Total Nitrogen[2]	Total Phosphorus[2]	Turbidity[2]	Chlorophyll a[2]
	CFU/100 mL	µg/L	µg/L	µg/L	µg/L	NTU	µg/L
HM4	506	1.4	8.0	102	8.3	NR	0.18
HZ	225	NR	NR	NR	NR	0.31	NR
Applicable Water Quality Standard	[3]	5.0	3.5	150	20	0.50	0.30

NR = Not Reported
1 Source: Monthly and Quarterly DMR's submitted by the Permittee from July 2007 through October 2012.
2 Reported geometric mean is the maximum annual geometric mean from the top, middle, and bottom sampling points at each station.
3 The water quality standard established in HAR 11-54 during the drafting of the draft permit is a geometric mean of 34 CFU/100 mL.

3. Proposed Receiving Water Limitations

a. Basic Water Quality Criteria Applicable to the Facility

(1) The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the DOH, as required by the Water Quality Act of 1987 (P.L. 100-4) and regulations adopted thereunder. The DOH adopted water quality standards specific for open coastal waters in HAR, Chapter 11-54. The draft permit incorporates receiving water limitations and requirements to ensure the facility does not exceed applicable water quality standards.

(2) The previous permit established the designation of Mamala Bay as "Class A Dry Open Coastal Waters". This has been determined to be a technical mistake in the previous permit. Due to the discharge of greater than 3 million gallons per day of "fresh water" per mile of shoreline, into the receiving water, "wet" criteria is applicable. The freshwater discharged in the vicinity of the outfall does not appear to have been considered during the previous permit effort, thus represents new information. Consistent with CWA Section 402(o)(2), and as further described below, the applicable criteria for Mamala Bay in the vicinity of the discharge has been established as "wet" for the purposes of this permit renewal.

(3) Mamala Bay is designated as "Class A Wet Open Coastal Waters". As such, the discharge from the facility shall not interfere with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife and allows recreational activities in and on the water. The draft permit incorporates receiving water limitations for the protection of the beneficial uses of Mamala Bay.

The Permittee is required to comply with the HAR, Chapter 11-54, Basic Water Quality Criteria.

(4) The following criteria are included in HAR, Section 11-54-8(b) for recreational areas in marine recreational waters:

(a) Within 300 meters (1,000 feet) of the shoreline, including natural public bathing or wading areas, enterococcus content shall not exceed a geometric mean of 35 CFU per 100 milliliters in not less than five samples which shall be spaced to cover a period between 25 and 30 days. No single sample shall exceed the single sample maximum of 104 CFU per 100 milliliters.

Based on the State Enterococcus standard at the time of reissuance, the previous permit included a geometric mean of 7 CFU per 100 milliliters but did not establish a single sample maximum. However, as explained by the DOH in *Rationale for Proposed Revisions to Hawaii Administrative Rules Title 11 Department of Health Chapter 54 Water Quality Standards*, the State enterococcus standard of 7 CFU per 100 milliliters was based mainly on a health risk assessment, not as a regulatory limit. In the rationale, the DOH recommended that the State enterococcus water quality standard be revised to a geometric mean of 35 CFU per 100 milliliters and a single sample maximum value of 104 CFU per 100 ml to be consistent with federal standards. The new standards were adopted by the DOH on June 15, 2009, and approved by the EPA on March 19, 2010. The draft permit establishes the new enterococcus standards from HAR, Section 11-54-8(b) for recreational waters within 300 meters (1,000 feet) of shoreline. Since the new water quality standards were adopted by the DOH and EPA for all marine recreational waters, DOH has determined that the impact the new water quality standards established in the draft permit will be insignificant and the level of water quality necessary to protect the existing uses will be maintained and protected.

(b) At locations where sampling is less frequent than five samples per 25 to 30 days, no single sample shall exceed the single sample maximum nor shall the geometric mean of these samples taken during the 30-day period exceed 35 CFU per 100 milliliters.

(c) Raw or inadequately treated sewage, sewage for which the degree of treatment is unknown, or other pollutants of public health significance, as determined by the director of health, shall not be present in natural public swimming, bathing, or wading areas. Warning signs shall be posted at locations where human sewage has been identified as temporarily contributing to the enterococcus count.

The draft permit establishes these criteria for recreational areas, as described in Part C of the draft permit, to be consistent with HAR, Section 11-54-8(b).

b. Specific Criteria for "Class A Wet Open Coastal Waters"

Table F-13. Specific Criteria for "Class A Wet Open Coastal Waters"

Parameter	Units	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total Nitrogen	µg/L	150.00	250.00	350.00
Ammonia Nitrogen	µg/L	3.50	8.50	15.00
Nitrate + Nitrite Nitrogen	µg/L	5.00	14.00	25.00
Total Phosphorus	µg/L	20.00	40.00	60.00
Light Extinction Coefficient	k units	0.20	0.50	0.85
Chlorophyll a	µg/L	0.30	0.90	1.75
Turbidity	NTU	0.50	1.25	2.00
pH	standard units	Shall not deviate more than 0.5 standard units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain, or groundwater discharge may depress the pH to a minimum level of 7.0.		
Dissolved Oxygen	% saturation	Shall not be less than 75 percent saturation, determined as a function of ambient water temperature and salinity.		
Temperature	°C	Shall not vary more than 1°C from ambient conditions.		
Salinity	ppt	Shall not vary more than 10 percent from natural or seasonal changes considering hydrologic input and oceanographic factors.		

The specific water quality criteria listed at HAR, Section 11-54-6(b)(3) for "Class A Wet Open Coastal Waters" shall apply to the treated wastewater through Outfall Serial No. 001, as seen in the table above.

The discharges from Outfall Serial No. 001 shall comply with the values listed in Table F-13 for light extinction coefficient, turbidity, and dissolved oxygen at the edge of the ZID and shall comply with water quality standards for all other pollutants listed in Table F-13 beyond the ZOM.

These requirements are consistent with HAR, Chapter 11-54 and retained from the previous permit.

c. Zone of Initial Dilution (ZID) and Zone of Mixing (ZOM)

Federal regulations at 40 CFR 125.62(a) requires that at the time a 301(h) modification becomes effective, the Permittee's outfall and diffuser must be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the ZID, all applicable State water quality standards and, for pollutants for which there are no EPA-approved standards. EPA's Amended Section 301(h) Technical Support Document (1994) describes the ZID as the area around the diffuser circumscribed by the distance "d" from any point of the diffuser, where "d" is equal to the water depth. The ZID dimensions for the facility as defined in EPA's TDD are 400 feet wide and 2,165 feet along the centerline of the diffuser.

HAR, Chapter 11-54 allows for a ZOM , which is a limited area around outfalls to allow for initial dilution of waste discharges, if the ZOM is in compliance with requirements in HAR, Section 11-54-9(c). The Permittee has requested that the existing ZOM for the assimilation of treated wastewater from the Mamala Bay be retained. Consistent with the current permit, the ZOM requested is 2,000 feet wide and 3,700 feet along the centerline of the diffuser, and extends vertically downward to the ocean floor. Figure 2 in the draft permit shows the ZOM and ZID.

(1) Prior to the renewal of a ZOM, the environmental impacts, protected uses of the receiving water, existing natural conditions, character of the effluent, and adequacy of the design of the outfall must be considered. The following findings were considered:

(a) The Permittee's ZOM application indicates indicate that no major physical effects are expected due to the continuation of the ZOM.

A comparison of data from nineteen annual reports summarized in the Permittee's 2010 *Community Structure of Fish and Macrobenthos at Selected Shallow-Water Sites Adjacent to the Barbers Point Ocean Outfall, O'ahu, Hawai'i,* shows that no statistically significant change has occurred in the measured biological parameters at the four stations within 2.2 km of the outfall that would suggest any impact from the operation of the outfall diffuser.

The Permittee sampled seven stations in January and February 2010 for benthic fauna at Monitoring Stations HZ, HB2, HB3, HB4, HB6, and HB7 and summarized the results in *Benthic Faunal Sampling Adjacent to the Barbers Point Ocean Outfall, O'ahu, Hawai'i, January-February 2010.* In this report, the Permittiee concluded that there is no indication of any marked alteration of the benthic community composition related to station proximity to the outfall diffuser. The analyses of all faunal groups clearly demonstrate the presence of a diverse and abundant macrobenthos within and near the ZID of the Barbers Point ocean outfall.

Based on the studies, there is no current evidence that the outfall or the existing ZOM is adversely impacting fish health or community structure.

(b) The diffuser for Outfall Serial No. 001 reportedly provides a minimum of 144:1 dilution and discharges approximately 8,760 feet offshore. No information provided in the ZOM application indicates that dilution would be negatively impacted by current conditions. Further, the permit requires the Permittee to conduct a ZOM Dilution Analysis Study to evaluate the available dilution at the edge of the ZOM within 3 years of the effective date of the permit and verify the presence or absence of assimilative capacity for nutrients with reasonable potential.

(c) Effluent data and receiving water data are provided in Tables F-6, F-9, F-10, F-11, and F-12 of this Fact Sheet. The effluent and receiving water data indicate there is a potential for nutrient (ammonia nitrogen) impairment as discussed in Part D.2.e of this Fact Sheet. However, as discussed above, biological monitoring of the facility's diffuser found that no evidence of negative impacts to fish populations due to the diffuser were identified.

(2) HAR 11-54-9(c)(5) prohibits the establishment of a ZOM unless the application and supporting information clearly show: that the continuation of the ZOM is in the public interest; the discharge does not substantially endanger human health or safety; compliance with the WQS would produce serious hardships without equal or greater benefits to the public; and the discharge does not violate the basic standards applicable to all waters, will not unreasonably interfere with actual or probably use of water areas for which it is classified, and has received the best degree of treatment or control. The following findings were made in consideration of HAR 11-54-9(c)(5):

(a) The facility treats domestic wastewater from the Halawa, Mililani, and Ko'Olina communities on the Island of Oahu, serving approximately 335,000 people and is a necessity for public health. There are no other treatment facilities currently servicing this area and a cessation of function or operation would cause severe hardship to the residents.

(b) No known information indicates that the discharge is causing or contributing to conditions that substantially endanger human health or safety. The Permittee reports that enterococcus bacteria data; fish tissue bioaccumulation, fish population, and fish species survey; coral reef growth survey and fish histopathology surveys do not indicate deleterious impacts to the receiving water from the discharge from Outfall Serial No. 001.

(c) The feasibility and costs to install treatment necessary to meet applicable WQS end-of-pipe, or additional supporting information, were not provided by the Permittee to demonstrate potential hardships. However, based on effluent data, significant facility enhancements and capital costs would likely be necessary to comply with applicable WQS for which the ZOM was applied. As discussed in Part E.3.c.(2)(a), the operation of the facility has been found to benefit the public. No information is known that would revise the finding during the previous permit term that compliance with the applicable WQS without a ZOM would produce serious hardships without equal or greater benefits to the public.

(d) As discussed in Part D.2.c.(5)(c) of this Fact Sheet, effluent data indicates the presence of pollutants in excess of applicable WQS. However, this permit establishes water quality-based effluent limitations based on WQS. The Permit requires compliance with the effluent limitations and conditions which are protective of the actual and probable uses of the receiving water and implement applicable technology-based effluent limitations.

The Department has determined that the ZOM satisfies the requirements in HAR, Section 11-54-09(c)(5).

The establishment of the ZID and ZOM is subject to the conditions specified in Part D of the draft permit. The draft permit incorporates receiving water monitoring requirements which the DOH has determined are necessary to evaluate compliance of the Outfall Serial No. 001 discharges with the applicable water quality criteria.

F. Rationale for Monitoring and Reporting Requirements

40 CFR 122.41(j) specify monitoring requirements applicable to all NPDES permits. HAR, Section 11-55-28 establishes monitoring requirements applicable to NPDES permits within the State of Hawaii. 40 CFR 122.48 and HAR, Section 11-55-28 require that all NPDES permits specify requirements for recording and reporting monitoring results. The principal purposes of a monitoring program are to:

- Document compliance with waste discharge requirements and prohibitions established by the DOH;

- Facilitate self-policing by the Permittee in the prevention and abatement of pollution arising from waste discharge;

- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards; and,

- Prepare water and wastewater quality inventories.

The draft permit establishes monitoring and reporting requirements to implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the draft permit.

1. Influent Monitoring

Influent monitoring is required to determine the effectiveness of pretreatment and non-industrial source control programs, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. Influent monitoring requirements for flow, BOD_5, pH, and TSS have been retained from the previous permit. Additionally, influent monitoring for chlordane, dieldrin, and DDT has been established in the draft permit in order to determine if chlordane, dieldrin, and DDT are present in the influent in elevated concentrations. Influent monitoring frequency for oil and grease has been increased to twice per week to be consistent with effluent monitoring requirements. The permit does not retain influent monitoring requirements for priority pollutants because monitoring is not necessary to determine compliance with requirements of this permit. The proposed influent water monitoring requirements are specified in Part A.1 of the draft permit.

2. Effluent Monitoring – Outfall Serial No. 001

The following monitoring requirements are applicable at Outfall Serial No. 001.

a. Monitoring requirements for ammonia nitrogen, nitrite plus nitrate nitrogen, total nitrogen, and total phosphorous have been added to the draft permit to determine if the facility effluent is contributing to elevated concentrations of said pollutants within the receiving water. Effluent data is also necessary to evaluate compliance with the effluent limitation for ammonia nitrogen.

b. Monitoring requirements for turbidity have been added to the draft permit to enable comparison with the receiving water ZID monitoring results to determine if the facility effluent is contributing to elevated concentrations of turbidity pollutants.

c. Monitoring requirements for flow have been retained from the previous permit to calculate pollutant loading and to determine compliance with mass-based effluent limitations.

d. Monitoring requirements for temperature have been retained from the previous permit to determine compliance with water quality standards.

e. Monitoring requirements for BOD_5, enterococcus, pH, and TSS have been retained from the previous permit in order to determine compliance with effluent limitations.

f. Monitoring requirements for total oil and grease have been retained from the previous permit and monitoring requirements for total petroleum hydrocarbons and fats, oils, and grease have been established in this permit to ensure that the facility is meeting the basic water quality criteria contained in HAR, Section 11-54-4(a), which states all waters shall be free of "Floating debris, oil, grease, scum, or other floating materials", and in the Standard NPDES Permit Conditions, which is included as an attachment to the draft permit.

g. Monitoring requirements for chlordane, dieldrin, and DDT have been established in the draft permit to determine compliance with newly established effluent limitations and to collect data for future RPAs.

h. Monitoring requirements for fecal coliform organisms have not been retained from the previous permit because this permit does not include effluent limitations for fecal coliform bacteria.

i. Monitoring requirements for total residual chlorine have not been retained from the previous permit because the facility does not use chlorine and effluent limitations for chlorine have not been retained in this permit.

j. Monitoring requirements for all other pollutants listed in Appendix 1 are retained from the previous permit in order to collect data for future RPAs.

3. Whole Effluent Toxicity Monitoring

Consistent with the previous permit, monthly whole effluent toxicity testing is required in order to determine compliance with whole-effluent toxicity effluent limitations as specified in Parts A.1 and B of the draft permit.

4. Receiving Water Quality Monitoring Requirements

a. Shoreline Water Quality Monitoring

Shoreline water quality monitoring for enterococcus is used to determine compliance with water quality criteria specific for marine recreational waters within 300 meters (1,000 feet) of shoreline. The Permittee shall monitor at four stations with a frequency of 5 days per month in order to calculate a geometric mean. These monitoring requirements are retained from the previous permit and included in Part E.1 of the draft permit. In addition, the Permittee shall include visual observations when of the shoreline monitoring stations five days per month.

This permit does not retain shoreline monitoring requirements for fecal coliform bacteria because it is not necessary to determine compliance with requirements of this permit.

b. Nearshore Water Quality Monitoring

Commented [TW8]: Permittee has requested that these stations not be within 2,000 feet of shore because breaking waves make monitoring at these locations impractical. See comment in permit.

Nearshore water quality monitoring is required to determine compliance with State water quality standards. The draft permit requires the Permittee to monitor recreational waters at four stations, HN1 through HN4. These stations are beyond 300 meters (1,000 feet) from shore and, therefore, monitoring at these stations is not intended for compliance with specific water quality criteria for recreational areas in Part C of the draft permit. This permit retains all nearshore water quality monitoring requirements with the exception of fecal coliform organisms. Monitoring for fecal coliform organisms is not retained because it is not necessary to determine compliance with requirements of this permit.

c. Offshore Water Quality Monitoring

Offshore water quality monitoring is required to determine compliance with State water quality standards. The draft permit requires the Permittee to monitor offshore waters at six stations in and along the ZID, two stations outside the ZID, and four stations on the ZOM. All monitoring requirements for offshore stations are retained from the previous permit and included in Part E.3 of the draft permit, with the exception of fecal coliform organisms. Monitoring for fecal coliform organisms is not retained because it is not necessary to determine compliance with requirements of this permit.

Ocean current monitoring has not been retained. Ocean current data collected over the current permit term is sufficient to determine the potential for onshore transport of effluent and aid in predictions of effluent dilution and sediment accumulation.

Commented [DC9]: We assume this statement to be true.

d. Nearshore and Offshore Sediment Monitoring

Commented [TW10]: The Permittee requests that we do not retain these monitoring requirements. If we do retain it, they want us to have stations HB1 and HB7 moved because the of widespread algae growth on the ocean floor making it difficult to sample.

Nearshore and offshore sediment monitoring is required to detect spatial and temporal trends in sediment pollutants and benthic organisms. The draft permit requires the Permittee to monitor offshore sediments for chemistry and benthic organisms at the following stations:

Location	Station Name	Number of Samples at Each Station (Including Replicates)	
		Chemistry	Benthic Organisms
Offshore	HZ	3	3
	HB1	3	3
	HB2	3	3
	HB3	3	3
	HB4	3	3
	HB6	3	3
	HB7	3	3

Commented [TW11]: Previous permit required 5 replicate samples for benthic organisms the first year and then the number of replicate samples may be changed in subsequent sampling. Do we want to retain that in the proposed permit?

e. Fish Monitoring

Fish monitoring is required at three locations, at the outfall and at two fish monitoring stations (FR1-B and FR2-B) within the ZID, to determine if fish are being negatively affected by effluent discharged at Outfall Serial No. 001 compared to the control stations. Fish tissue monitoring requirements have been retained from the previous permit.

d. Coral Reef Survey

An assessment of coral communities in the Barbers Point area, and the impact of the Honouliuli wastewater discharge, has been retained from the previous permit. The assessment has been retained to identify any potential impacts on the coral communities due to the discharge of primary treated effluent from the facility.

e. ZOM Dilution Analysis Study

Permit requirements have been based on a limited assessment of assimilative capacity within the receiving water. The Permittee is required to confirm that assimilative capacity is available in the receiving water for ammonia nitrogen.

G. Rationale for Provisions

1. Standard Provisions

The Permittee is required to comply with DOH Standard NPDES Permit Conditions, which are included as part of the draft permit.

2. Monitoring and Reporting Requirements

The Permittee shall comply with all monitoring and reporting requirements included in the draft permit and in the DOH Standard NPDES Permit Conditions.

3. Special Provisions

a. Reopener Provisions

The draft permit may be modified in accordance with the requirements set forth at 40 CFR 122 and 124, to include appropriate conditions or limitations based on newly available information, or to implement any new state water quality criteria that are approved by the EPA.

b. Special Studies and Additional Monitoring Requirements

(1) Toxicity Reduction Requirement. The draft permit requires the Permittee to submit an initial investigation Toxicity Reduction Evaluation (TRE) workplan to the Director and EPA which shall describe steps which the Permittee intends to follow in the event that toxicity is detected. This requirement is retained from the previous permit and is discussed in detail in Part B.2 of the draft permit.

4. Special Provisions for Municipal Facilities

a. Pretreatment Requirements

The federal CWA Section 307(b), and federal regulations, 40 CFR 403, require POTWs to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to CWA Sections 307(b), (c), (d), and 402(b), 40 CFR 125, 40 CFR 403, and in HAR, Section 11-55-24.

The draft permit includes a pretreatment program in accordance with federal regulations and State pretreatment regulations. The pretreatment requirements are based on the previous permit and are consistent with NPDES permits issued to other Hawaii POTWs. The draft permit also continues to require the Permittee to submit and implement a BMP-based program for controlling animal and vegetable oil and grease.

Commented [TW12]: This was included in the Sand Island permit renewal based on the previous SI permit. It is not in the current Honouliuli permit. Should we add it?

Large applicants for a modified NPDES permit under section 301(h) of the CWA with a service population greater than 50,000 that receives one or more toxic pollutants from an industrial source are required to comply with urban area pretreatment requirements at 40 CFR 125.65. The Permittee has indicated that it will comply with the urban area pretreatment requirements by demonstrating that it has applicable pretreatment requirements in effect. This demonstration involves the Permittee performing a local limitations analysis and developing any needed local limitations. Although the Permittee was denied reissuance of the 301(h) variance, the facility will continue to discharge primary treated wastewater until facility upgrades are complete. Therefore, a schedule for local limitations analysis and conditions regarding significant industrial user compliance and an annual local limitations reevaluation is retained in the draft permit.

b. Biosolids Requirements

The use and disposal of biosolids is regulated under federal laws and regulations, including permitting requirements and technical standards included in 40 CFR 503, 257, and 258. The biosolids requirements in the draft permit are in accordance with 40 CFR 257, 258, and 503, are based on the previous permit and are consistent with NPDES permits issued to other Hawaii POTWs.

5. Other Special Provisions

a. Water Pollution Prevention Program. The draft permit requires the Permittee to submit a wastewater pollution control plan by March 31 each year. This provision is required to allow DOH to ensure that the Permittee is operating correctly and attaining maximum treatment of pollutants discharged by considering all aspects of the wastewater treatment system. This provision is included in Part F of the draft permit.

b. Wastewater treatment facilities subject to the draft permit shall be supervised and operated by persons possessing certificates of appropriate grade, as determined by the DOH. If such personnel are not available to staff the wastewater treatment facilities, a program to promote such certification shall be developed and enacted by the Permittee. This provision is included in the draft permit to ensure that the facility is being operated correctly by personnel trained in proper operation and maintenance. This provision is retained from the previous permit and included in Part J.1 of the draft permit.

c. The Permittee shall maintain in good working order a sufficient alternate power source for operating the wastewater treatment and disposal facilities. This provision is retained from the previous permit in order to ensure that if a power failure occurs, the facility is well equipped to maintain treatment operations until power resumes. If an alternate power source is not in existence, the draft permit requires the Permittee to halt, reduce, or otherwise control all discharges upon the reduction, loss, or failure of the primary source of power. This provision is included in Part J.2 of the draft permit.

H. Public Participation

Persons wishing to comment upon or object to the proposed draft NPDES permit in accordance with HAR, Sections 11-55-09(b) and 11-55-09(d), may submit their comments in writing either in person or by mail, to:

Clean Water Branch
Environmental Management Division
919 Ala Moana Boulevard, Room 301
Honolulu, HI 96814-4920